**Ayon Saneel Das**

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## Skills

**Python Computer Language** June 2015 – Present
- Machine Learning - Numpy, Scikit-Learn, PyTorch
- Web Development - Flask

**C / C++ / C# Computer Language** August 2016 – Present
- Game Development - Unity, Godot
- Low-level development - Operating Systems, Architecture, Networks

**Java / JavaScript Computer Language** June 2014 – Present
- Certified with Oracle - 04/28/2022
- App Development - Android Studio
- Web Development - React

**Robotics / Mechanical** January 2017 – Present
- University of Texas Intelligent Ground Vehicle Competition Team - Mechanical / Programming
- First Tech Challenge (Team 11629) – Build Lead / Programming (Regional Qualifier x2)

**Mathematics (Competitive)** September 2014 – Present
- AMC 10 Distinguished Honor Roll, 5x AIME Qualifier (Max Score 9)
- Harvard MIT Math Tournament Top 20 Teams (2018 / 2021)
- American Regions Mathematics League Junior Varsity Top Team (2018)

**Programming (Competitive)** April 2019 – Present
- Lockheed Martin CodeQuest High Achiever - 1st Place in State (2021)
- HP CodeWars High Achiever - 1st Place in State and Country (2021), 3rd in State (2020)
- American Computer Science League Finalist (2021 and 2022)
- UIL 2nd Top Team in State (2022)
- USACO Silver Level (Perfect Score in Bronze)

**Blender / 3D Modeling** June 2012 – Present
- Personal Designing Hobby, also implemented in Unity, Godot, Autodesk / SolidWorks CAD

## Education

**The University of Texas at Austin** Austin, TX

*Bachelor of Science in Computer Science (Turing Scholars - Junior)* *GPA: 3.975*

*Bachelor of Science in Math, Minor in Economics* *Aug. 2022 – May 2026*

| Course | Name | Grade | Course | Name | Grade | Course | Name | Grade |
|---|---|---|---|---|---|---|---|---|
| CS 373 | Software Engineering | A | CS 363H | Honors Prin. of ML I | A | CS 343H | Honors Artificial Intelligence | A |
| CS 347 | Data Management | A | CS 331H | Honors Algorithms | A- | CS 356 | Computer Networks | A |
| M 362K | Probability I | A | SDS 378 | Intro. to Mathematical Stats | A | ECO 420K | Microeconomic Theory | A |

## Work

**Vislab Research Assistant** January 2023 – Present

*Texas Advanced Computing Center (TACC)* *Austin, TX*
- Developing software for the Texas LASSO system, including an interactive simulation of complex molecular dynamics.
- Working with Unity to develop interactive VR experiences to aid in data and scientific visualization.
- Synthetic Data project with Unity for visualization of glacier data in Greenland
- Customizable pipeline for applying textures to a scientific model without grid-like appearance
- Graphic visualization of data for the NSF-GCR Community: see at https://sites.google.com/utexas.edu/gcr/
- Developing a small cluster using Raspberry Pi's (Network programming and setup)
- Providing interactive and engaging tours of the Vislab to present TACC and research as a whole to students

## Research

**Living with Robots Laboratory (With Dr. Justin Hart)** | *Python, C++, ROS, Linux* April 2024 – Present
- Developing architecture for LLM-powered agent capable of using natural language instructions.
- Utilizing modified CLIP architecture with SAM for object detection.
- Developing code (C++, Python, ROS) / working with networks to help run robot with UR5 arm.

**Retrieval LLM (With Dr. Eunsol Choi)** | *Python, PyTorch, JSON* May 2024 – Present
- Using language models to determine accuracy of new methods of retrieval.

**NVIDIA AI Algorithm Team - LLM Data Science** | *Python, JSON* May 2023 – January 2024
- Developed scripts and methods to generate and clean testing data alongside senior researchers.

**Detecting Trace Substances** | *Matlab, Python, Machine Learning* August 2019 – March 2020

**Defeating Multidrug Resistance** | *Python, Genetics Database* September 2018 – April 2019